

Claims

We Claim:

- 5 1. A correlation method comprising the steps of:
 receiving a signal sequence;
 re-ordering the signal sequence based upon a predetermined order; and
 performing a transform on the re-ordered sequence.
- 10 2. The method of claim 1 wherein the transform is selected from a group
 consisting of: Fast Hadamard Transform (FHT), Fast Walsh Transforms, Fast
 Walsh-Hadamard Transform.
3. The method of claim 1 wherein the signal sequence comprises at least one
15 m-sequence.
4. The method of claim 3 wherein the predetermined order is based on a
 generator polynomial of at least one m-sequence.
- 20 5. The method of claim 1 wherein the signal sequence comprises at least one
 specially augmented m-sequence.
6. The method of claim 5 wherein the predetermined order is based on a
 generator polynomial of at least one specially augmented m-sequence.
- 25 7. The method of claim 1 wherein a dimension of the transform is equivalent
 to a number of available channels.
8. The method of claim 1 wherein a dimension of the transform is different
30 than a number of available channels.

9. A device comprising:
a receiver for receiving elements of a signal sequence;
a state generator for generating a sequence of addresses to translate
between a pseudonoise sequence and a Walsh sequence; and
5 a storage medium, coupled to the receiver and the state generator, for
storing each element of the signal sequence at a given address according to the
sequence of addresses.
10. The device of claim 9 wherein the state generator comprises a linear
10 feedback shift register.
11. The device of claim 10 wherein the linear feedback shift register is a
Fibonacci sequence generator.
- 15 12. The device of claim 9 wherein the state generator is a second storage
medium.
13. The device of claim 9 wherein the pseudonoise sequence is a specially
augmented m-sequence.
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14. The device of claim 9 further comprises a processor, coupled to the
storage medium, for performing a transform on at least a portion of the elements
of the signal sequence stored in the storage medium.
- 25 15. The device of claim 14 the transform is selected from a group consisting
of: Fast Hadamard Transform (FHT), Fast Walsh Transforms, Fast Walsh-
Hadamard Transform.
16. The device of claim 9 wherein the receiver comprises an analog-to-digital
30 converter.